

ABSTRACT

Optical amplifying method and apparatus are proposed. Constant gain amplifiers operate such that the output power of the amplifier generally tracks the input power. However, 5 optical systems are not perfect and the input to the optical amplifier stage includes not only the desired signal, but also includes accumulated effects of the imperfections. The imperfections include losses of the fiber sections, variations in laser powers, and drifts. Thus, simple amplification not 10 only amplifies the desired signal, but also amplifies accumulated imperfections. Such imperfections occur over time and are generally small in magnitude. By operating the amplifier such that amplification of small variations is suppressed while allowing for tracking of large input variations, 15 amplifying the accumulated imperfections is minimized.